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10/786,054	02/26/2004	Yukio Oguma	122.1582	3298

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EXAMINER	
RAHMAN, FAHMIDA	
ART UNIT	**PAPER NUMBER**
2116	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/18/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/786,054	OGUMA, YUKIO	
	Examiner	Art Unit	
	Fahmida Rahman	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 October 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 3-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/17/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This final action is in response to communications filed on 10/02/06.

2. Claims 1, 3, 4, 7, 10, 11, 12, 14, 17, 18 have been amended, claim 2 has been canceled and no new claims have been added. Thus, claims 1, 3-18 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3, 7, 8, 9, 10, 11, 12, 13, 15, 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US Patent 6754818), in view of QvalueList Class preference.

For claim 1, Lee et al teach the following limitations:

An apparatus (Fig 1) **where an operating system** (lines 13-17 of column 3) **read out from a selected device of a multiplexed plurality of devices** (102) **is started up** (260) **for starting up the system** (abstract), **comprising: a storing unit** (110) **which stores environment data** (118, 114, 120) **for setting a boot from said plurality of devices** (Fig 2), **said environment data includes first variable data** (114 in Fig 1)

including device setting data designating a boot candidate for said plurality of devices (lines 28-31 of column 3), **second variable data** (120 in Fig 1) **including index data designating a boot device based on said device setting data** (lines 50-55 of column 3) **and third variable data** (118 in Fig 1) **indicating whether said multiplexing is valid or not is set** (lines 45-55 of column 3 mentions that BISST performs a number of operations including a list of boot devices available. Lines 15-20 of column 4 mention that successful booting is performed as long as at least one uncorrupted boot image available. Therefore, BISST notifies the system when uncorrupted image is available by maintaining the available boot device list, which indicates multiplexing is valid. When no more uncorrupted image is available, the multiplexing is invalid); **a boot control unit** (106 and 108) **which decides on a boot device** (250 in Fig 2) **based on the setting of first variable data, second variable data and third variable data included in said environment data** (Fig 2 shows that 250 depends on 210-240 that makes use of 114, 118, 120) **and starting up said operating system stored in said boot device** (260), **and a control unit** (Fig 2 is a control routine. Thus, there is an associated control unit to execute the routine) **which controls multiplexing of said plurality of devices, said control unit changing the setting of said environment data** (240) **and controlling switching to another device when an abnormality is detected in said boot device** (lines 48-50 of column 2 mention that another boot image is selected when computer system hangs on a corrupted image)

Lee et al teaches the third variable data (118) in which a value indicates whether multiplexing is valid or not is set. Although not explicitly mentioned, the value should be binary as return value of a program typically true/false (118 controls the multiplexing. 118 is linked to BIOS as mentioned in line 43 of column 3. 118 configured to select boot device. Thus, when there is no boot device available, 118 would return "false" to BIOS. In such a case, it can be considered that multiplexing is not valid). A document showing returning of true/false binary value is attached (the isEmpty() routine determines if a component in the list is available and returns true/false according to that). One ordinary skill would be motivated to return true/false binary value as it is widely used approach in the art.

For claim 3, the system of Lee et al follows the round robin approach. Thus, the device initially set in device setting data can be selected for booting. In addition, system clears the index data shown in 240.

For claim 7, system of Lee et al boots up when BISST returns a good selected boot device (i.e., multiplexing is valid) and index data changes to reflect the current boot device. The initial value of index data is the previous boot device.

For claim 8, system of Lee et al reports corrupted image and ensures booted into a good state (lines 14-15 of column 6).

For claim 9, second variable data is cleared to initial value at the beginning.

For claim 10, BISST returns "no" or false when there is no device available (i.e., plurality of devices are not set for redundant operation).

For claim 11, lines 16-19 of column 6 mention that corrupted boot image is removed until it is repaired. Fig 5 shows that only the current boot device is connected to BDP. Thus, the earlier failed boot device is cut off and a new device is connected to boot port.

For claim 12, 320 is a non-volatile memory and the settings can be rewritten.

For claim 13, 112 is the boot firmware stored in 110.

For claim 15, 260 shows the loading and initialization of operating system.

For claim 17, Lee et al teach the following limitations:

A method for starting up data processing system in which (Fig 1) **an operating system read out from a selected device of a multiplexed plurality of devices** (104) **is started up for starting up the system** (abstract), **comprising: storing** (110) **environment data** (118, 114, 120) **for setting a boot from said plurality of devices** (Fig 2), **said environment data includes first variable data** (114 in Fig 1) **including device setting data designating a boot candidate for said plurality of devices**

(lines 28-31 of column 3), **second variable data** (120 in Fig 1) **including index data designating a boot device based on said device setting data** (lines 50-55 of column 3) **and third variable data** (118 in Fig 1) **indicating whether said multiplexing is valid or not is set** (lines 45-55 of column 3 mentions that BISST performs a number of operations including a list of boot devices available. Lines 15-20 of column 4 mention that successful booting is performed as long as at least one uncorrupted boot image available. Therefore, BISST notifies the system when uncorrupted image is available by maintaining the available boot device list, which indicates multiplexing is valid. When no more uncorrupted image is available, the multiplexing is invalid); **deciding on a boot device** (240) **based on the setting of said environment data** (210, 220) **and starting up said operating system stored in said boot device** (260), **and controlling** (Fig 2 is a control routine. Thus, there is an associated control unit to execute the routine) **multiplexing of said plurality of devices and changing the setting of said environment data** (240) **and controlling switching to another device when an abnormality is detected in said boot device** (lines 48-50 of column 2 mention that another boot image is selected when computer system hangs on a corrupted image)

Lee et al teaches the third variable data (118) in which a value indicates whether multiplexing is valid or not is set. Although not explicitly mentioned, the value should be binary as return value of a program typically true/false (118 controls the multiplexing. 118 is linked to BIOS as mentioned in line 43 of column 3. 118 configured to select boot device. Thus, when there is no boot device available, 118 would return "false" to BIOS.

In such a case, it can be considered that multiplexing is not valid). A document showing returning of true/false binary value is attached (the isEmpty() routine determines if a component in the list is available and returns true/false according to that). One ordinary skill would be motivated to return true/false binary value as it is widely used approach in the art.

For claim 18, Lee et al teach the following limitations:

A recording medium storing a program for starting up data processing system (Fig 1) **in which an operating system read out from a selected device of a multiplexed plurality of devices** (104) **is started up for starting up the system (abstract), comprising the steps of: storing** (110) **environment data** (118, 114, 120) for setting a boot from said plurality of devices (Fig 2), **said environment data includes first variable data** (114 in Fig 1) **including device setting data designating a boot candidate for said plurality of devices** (lines 28-31 of column 3), **second variable data** (120 in Fig 1) **including index data designating a boot device based on said device setting data** (lines 50-55 of column 3) **and third variable data** (118 in Fig 1) **indicating whether said multiplexing is valid or not is set** (lines 45-55 of column 3 mentions that BISST performs a number of operations including a list of boot devices available. Lines 15-20 of column 4 mention that successful booting is performed as long as at least one uncorrupted boot image available. Therefore, BISST notifies the system when uncorrupted image is available by maintaining the available boot device list, which indicates multiplexing is valid. When no more uncorrupted image is available,

the multiplexing is invalid); **deciding on a boot device** (240) **based on the setting of said environment data** (210, 220) **and starting up said operating system stored in said boot device** (260), **and controlling** (Fig 2 is a control routine. Thus, there is an associated control unit to execute the routine) **multiplexing of said plurality of devices and changing the setting of said environment data** (240) **and controlling switching to another device when an abnormality is detected in said boot device** (lines 48-50 of column 2 mention that another boot image is selected when computer system hangs on a corrupted image)

Lee et al teaches the third variable data (118) in which a value indicates whether multiplexing is valid or not is set. Although not explicitly mentioned, the value should be binary as return value of a program typically true/false (118 controls the multiplexing. 118 is linked to BIOS as mentioned in line 43 of column 3. 118 configured to select boot device. Thus, when there is no boot device available, 118 would return "false" to BIOS. In such a case, it can be considered that multiplexing is not valid). A document showing returning of true/false binary value is attached (the isEmpty() routine determines if a component in the list is available and returns true/false according to that). One ordinary skill would be motivated to return true/false binary value as it is widely used approach in the art.

Claims 4-6, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US Patent 6754818), in view of QvalueList Class preference, further in view of Wu et al (US patent 6105130).

For claim 4, Lee et al teach that the boot device is selected when BISST returns a valid device and updates SBDID. However, Lee et al do not teach that the device is selected when "not" bit is set.

Wu et al teach a system where booting is done from a designated device when "yes" is set and from an initially set device when "no" is set (lines 17-27 of column 2 mention that system boots from SCSI device if user input exists, otherwise booting is performed from IDE device. That is equivalent to "yes"/"no" setting)

It would have been obvious for one ordinary skill in the art at the time the invention was made to combine the teachings of Lee et al and Wu et al. One ordinary skill in the art would have been motivated to boot when "no" is set, since that confirms the booting of the system.

For claim 5, the index data in SBDID is updated if BISST returns valid boot device.

For claims 6 and 16, system is booted when a good boot device is found.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al (US Patent 6754818), in view of QvalueList Class preference, further in view of Applicant's Admission of Prior Art.

For claim 14, control unit of Lee et al executes controlling of multiplexing of the plurality of devices and switches to another device when an abnormality has occured. However, Lee et al does not require system software read out from boot device to check multiplexing and processing.

Applicant admits that the system software read out from boot disk controls multiplexing and switching the booted disk drive ([0039] and [0040] of page 12 of applicants disclosure).

It would have been obvious for one ordinary skill in the art to combine the teachings of Lee et al, Qvalue List Class preference and AAPA. One ordinary skill in the art would be motivated to control multiplexing based on system software read out from boot device, since that would provide the redundancy of system software. As system software is saved in all devices, failure of BISST does not prevent system from working.

Response to Arguments

Applicant's arguments with respect to claims 1, 3-18 have been considered but are moot in view of the new ground(s) of rejection. As Lee et al is still relied upon for rejection, Examiner is addressing the relevant logic regarding Lee et al.

Applicant argues that the boot devices of Lee of the computer system to be booted do not have an operating system. The computer system is not started up using the operating systems installed in the boot device selected from multiplexed boot devices.

Examiner disagrees. Lines 10-14 of column 3 mention that boot devices 102 contain one or more copies of operating system. 260 of Fig 2 shows the loading of OS. Therefore, it is one of the boot devices 102 that stores the OS that is loaded in step 260. Since the system of Lee permits rotation of boot devices, the device containing OS can be selected as the boot device (as shown in 250 of Fig 2) to load the boot image from and read out the OS from that device.

Applicant further argues that OSs for starting up the system are not multiplexed in Lee.

Examiner disagrees. There is no requirement in claim that OSs be multiplexed.

Applicant further argues that the recited first, second and third variable data in claim differ from 114, 120 and 118.

Examiner disagrees. The claim language should describe how the recited first, second and third variables are different from those of Lee.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fahmida Rahman whose telephone number is 571-272-8159. The examiner can normally be reached on Monday through Friday 8:30 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on 571-272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Fahmida Rahman
Examiner
Art Unit 2116

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A. ELAMIN
PRIMARY EXAMINER
12/10/06